# Minister's Annual Report on Toxics Reduction

Ontario

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# Message from the Minister of the Environment

This first annual report on toxics reduction outlines some of the many steps the Province is taking to reduce the use, creation and release of toxics in Ontario's environment. This report provides a framework for actions as we move forward with the Toxics Reduction Strategy.

Ontario has the highest releases of toxics in Canada and one of the highest in North America[1]. Discharge of toxics is a serious environmental and health issue, associated with cancer, birth defects, respiratory problems and other health effects.

We know people are concerned about toxic substances in their air, land and water, and in the products they use. The Province is committed to protecting human health and the environment, and informing Ontarians about the substances being used in their communities.

We were guided by the recommendations of our Toxics Reduction Scientific Expert Panel, under co-chairs Dr. Miriam Diamond and Professor Lynda Collins, in developing the Toxics Reduction Act and regulation to protect the health of Ontario's families and the environment.

We have an agreement with Environment Canada to collect information on toxics used, created and contained in product by industry, in addition to the information already being gathered by the National Pollutant Release Inventory (NPRI). Ontario has gone beyond the NPRI by placing a new focus on planning for the reduction of the use and creation of toxic substances at the front end of the industrial process. This is an innovative approach for Ontario that has been effective in other jurisdictions.

Planning is a crucial component of the toxics reduction process. Industry has expressed concern over the time required to develop and implement effective plans and we have listened. The deadline for preparing and submitting the first plans has been extended by one year to 2012. The extension will provide these facilities with additional time to utilize guidance and technical resources. In addition, the extension will ensure there are sufficient planners in place to assist facilities in undertaking a rigorous planning process as well as developing and certifying their plans prior to the due date.

This report highlights companies such as Informco and Woodbridge Foam Corporation which have taken leadership roles in toxics reduction in Ontario.

Our policy on toxics reduction is designed to transition away from toxic chemicals to improve our quality of life, protect our environment and help build a green economy. In this work, Ontario is aligned with actions underway at the United Nations, the World Health Organization and throughout the U.S. and European Union (EU).

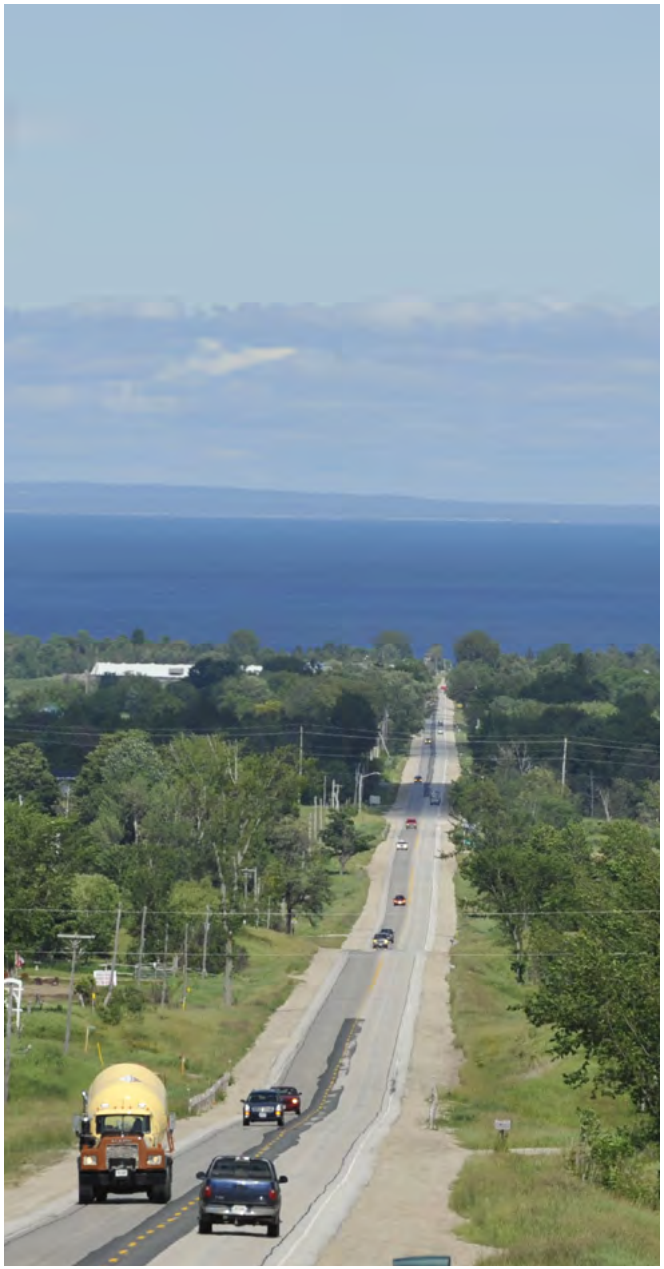
We have also taken action on reducing the use of pesticides, through the Cosmetic Pesticides Ban Act and subsequent regulation. Results from studies monitoring pesticide concentrations in urban streams show 80 per cent reductions in the concentrations of three pesticides commonly used in lawn care products, indicating the ban is working. Since the Province's cosmetic pesticides ban went into effect in 2009, we are seeing steady growth in the development of "greener" products. Manufacturers are investing in research and development to produce pesticide-free improved technologies and new products. Retailers are stocking eco-friendly lawn and garden solutions. Golf courses are demonstrating their efforts to minimize pesticides through integrated pest management practices and annual reporting of pesticide use. We are encouraged by the research being undertaken which may lead to the development of new commercial products.

We are committed to keeping Ontarians informed of our work on toxics reduction and we are developing some exciting new tools to support these efforts.

**Jim Bradley**
Minister of the Environment

[1] North American Commission on Environmental Cooperation, 2006

# Introduction



## Background — A New Approach to Regulating Pollution

Toxics are substances that can be harmful to humans, animals and/or the natural environment. Some industries in Canada are required to report to the **National Pollutant Release Inventory** (NPRI) on the approximately 360 listed substances, which may be released to the environment through mineral processing and manufacturing processes. These substances are tracked as they pose a risk to human health and/or the environment. NPRI is Canada's legislated and publicly accessible inventory of pollutant releases to the environment (air, water and land), disposals and transfers for recycling.

Ontario has developed a **Toxics Reduction Strategy** that builds upon the NPRI reporting requirements. Under the Toxics Reduction Strategy, Ontario is focusing on reducing the use and creation of toxics at the front end of the manufacturing process, augmenting the traditional "end of pipe" approach to managing the release of toxics.

Many substances captured under the Toxics Reduction Strategy end up in products that we use every day. When used as intended, these substances may pose minimal risk to human health and/or the environment. However, these substances can be harmful to human health and the environment under certain circumstances. As such, these substances are listed as toxic substances under the Toxics Reduction Act, 2009.

> ***"This Act has the potential to improve business practices and profits in Ontario while protecting human health and the environment in new ways which could include the creation of new jobs, innovations in pollution prevention and other efficiencies such as significant reduction of hazardous waste."***
> – Jan 31, 2011 Canadian Environmental Law Association EBR posting

In determining which substances would be the focus of early action under the Toxics Reduction Act, the ministry began with a regime familiar to industry - the NPRI - and prioritized them. This priority list forms the basis of Phase I. As a starting point, all of the NPRI substances and one non-NPRI substance, acetone, have been incorporated into Ontario's Toxics Reduction Act and regulation. We established a multi-stakeholder committee to provide input to the ministry on the "living list" of substances to ensure they are current and relevant to Ontario.

The **Toxics Reduction Act**, passed by the Ontario Legislature in June 2009 is the cornerstone of the Toxics Reduction Strategy. The act, coupled with **Ontario Regulation 455/09**, ensures that Ontario companies plan to reduce the use and creation of toxics, where possible, in their manufacturing and mineral processing facilities. The act and regulation were a result of significant consultation with health advocacy, environmental and labour groups, industry and the public.

## A Phased Approach

Phase I of the **Toxics Reduction Strategy** includes 47 substances or substance groups identified as priority toxics and carcinogens that are currently reported by Ontario facilities to the NPRI.

These substances have been identified based on one or more of the following:

- the volume of releases to the environment
- environmental toxicity
- human toxicity, including carcinogenicity

The identification of these priority substances was guided by the advice of the Minister's Toxics Reduction Scientific Expert Panel.

Panel members included: Professor Lynda Collins, Dr. Miriam Diamond, Louise Aubin, Dr. Ken Geiser, Dr. Patricia Harper, Dr. Paul Helm, Heather Logan, Dr. Lynn Marshall, Sarah Rang, Dr. Monica Campbell, and Dr. Philip Jessop.

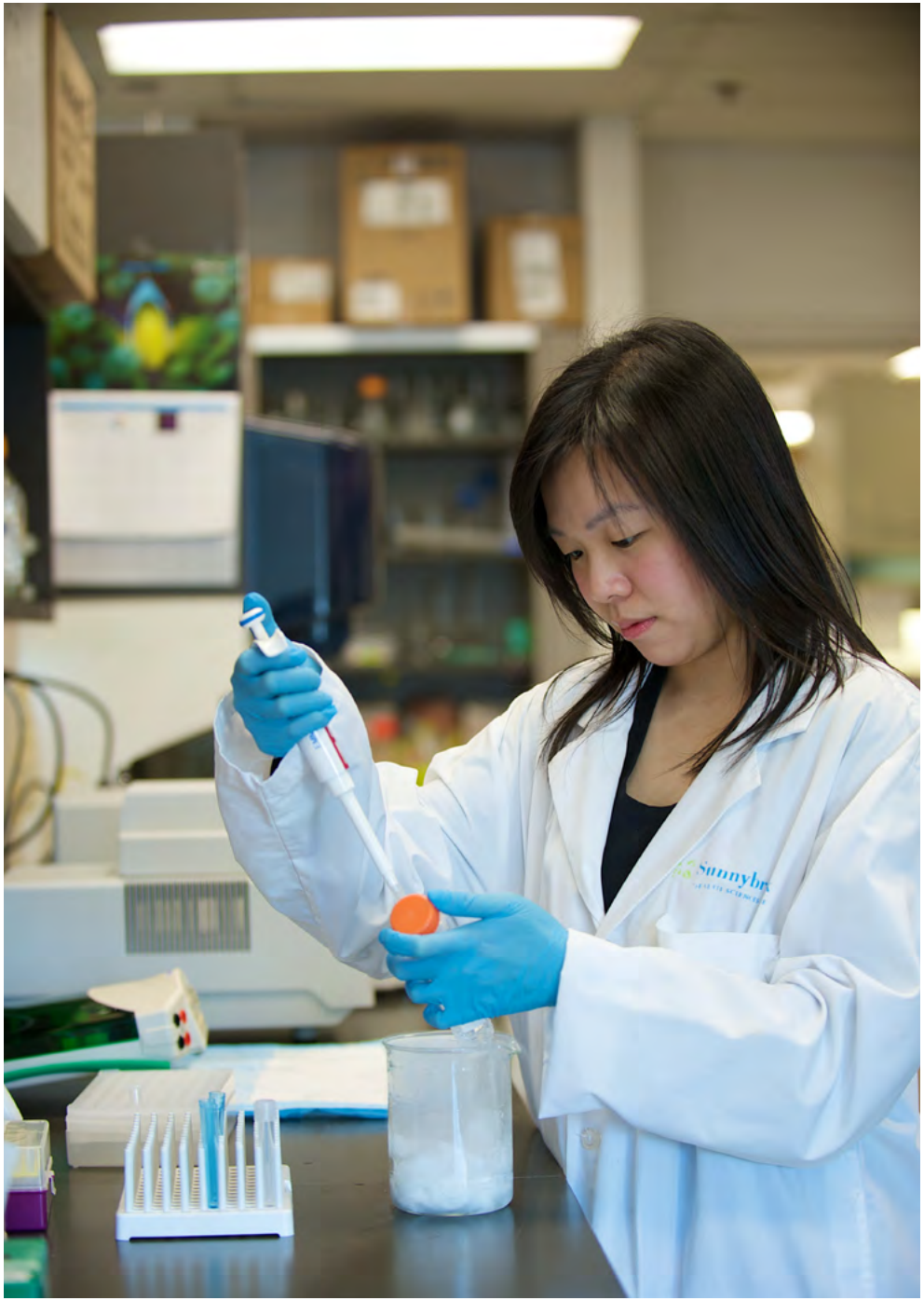
Our actions to date have made Ontario the leading province in Canada in toxics reduction legislation. We will continue our work in order to protect Ontario families, communities and the environment from the harmful effects of toxic substances.

## Objectives of the Strategy

The Toxics Reduction Strategy is focused on protecting human health and the environment while supporting the success of Ontario's businesses in the new green economy.

The strategy's key objectives include:

- protecting the quality of our lives and environment by reducing our exposure to toxic substances in the air, land, water and consumer products
- keeping Ontarians informed about toxics in their communities
- fostering a green economy by looking at toxic substance alternatives that benefit both industry and Ontarians



## Snapshot of Key Achievements

| | |
|---|---|
| **Toxics Reduction Act passed**<br>Ontario becomes the first province in Canada to enact comprehensive toxics reduction legislation and assumes a leadership role in the pursuit of a green economy. The act, a result of a promise made by the government to reduce the use, creation and release of toxics in Ontario's environment, received Royal Assent on June 5, 2009. | **June 2009** |
| **GreenCentre Canada funding announced**<br>Ontario is investing $13.6 million in GreenCentre Canada, a green technology consortium which connects green chemistry discoveries in Ontario universities to companies in order to develop alternatives to toxic chemicals and get them to the marketplace faster. | **September 2009** |
| **Green Chemistry Chairs established**<br>Chairs in Green Chemistry and Engineering have been established at Queen's University and Trent University as part of a commitment to financially support Green Chemistry and Engineering research. | **February 2010** |
| **First Green Chemistry and Engineering Awards presented**<br>The Green Chemistry and Engineering awards are presented to an individual and an organization who have made significant contributions to advance green chemistry and/or engineering, including the technical, economic, human health and environmental benefits.<br>• The Ontario Green Chemistry and Engineering Award (individual) was presented to Dr. Leo W. M. Lau of the University of Western Ontario for his work on the green manufacturing of novel polymer products.<br>• The Ontario Green Chemistry and Engineering Award (organization) was presented to Woodbridge Foam Corporation for their work focusing on green chemistry and clean technologies dating back to 1978 recognizing health, safety and environmental stewardship as being a key factor in all of its activities. | **August 2010** |
| **Toxics Reduction Annual Reports for 2010**<br>Facilities submitted their first reports on their 2010 toxic substance accounting. | **2011** |

## **Proactive Toxics Reduction:** A Company on the Forefront of Toxics Reduction

### Informco: Environmental Benefits and Operational Gains

Informco is a communications company, focused on marketing, design and printing services. Interested in reducing their environmental impact, Informco has conducted numerous pollution prevention assessments and continues to look to improve the operations of its facilities.

In order to reduce its toxics usage, Informco focused primarily on making modifications to its pressroom. By reusing wipers and towel solvents and recirculating the fountain solution used to dampen the printing plate before it is inked, fewer new materials were required throughout the printing process. Also, less hazardous waste was produced.

These improvements have resulted in an annual reduction in the creation of 2.4 tonnes of Volatile Organic Compounds (VOCs).

The company has received a number of environmental awards for its efforts, including the PrintAction Environmental Printing Award.

"Continuous improvement ensures we look each year at ways to further improve our environmental impact. Internally, we look at every aspect of our business and consider the environment … why? … because it's the right thing to do, simple. If we can do our part, we can make a difference", says Sandy Stephens, Vice President, Operations, Informco.

Informco's environmental efforts, coupled with their operational gains, demonstrate that it pays to be green.

## **Proactive Toxics Reduction:** Promoting Environmental Stewardship through Innovation

### Teknion (Tekwood): Environmental Benefits and Operational Gains

Headquartered in Toronto, Ontario, the Teknion Corporation is a leading international designer, manufacturer and marketer of office systems and related office furniture products.

Over the past several years, Teknion has made significant improvements to reduce the use of toxic substances and releases of hazardous waste. Some of Teknion's achievements include:

- A transition from solvent based paints to water based paints, resulting in a significantly smaller VOC footprint, a safer work environment and a superior end product.
- Acetone recycling. As a result of recycling and reclaiming, Teknion has reduced the use of acetone and is now able to recycle multiple times, reducing the costs associated with acetone by half.
- Highly toxic chemicals in the paints and stains, such as toluene, xylene, naphthalene and benzene are replaced with isopropyl alcohol which is less harmful to the environment.

These initiatives have helped Teknion reduce costs and emissions and have significantly decreased the amount of hazardous waste requiring disposal. As a result, Teknion has taken a leadership role in promoting good environmental stewardship through innovation.

Visit **www.teknion.com** to learn more about Teknion.

## Informing Ontarians On Toxics

Informing Ontarians about toxics in their communities is a fundamental objective of the Toxics Reduction Strategy. To meet this goal, facilities in the manufacturing and mineral processing sectors that are captured by the Toxics Reduction Act must account, report and then plan for the reduction of toxic substances.

In order to help ensure that Ontarians have easily accessible information, facilities are required to post annual reports and summaries of their toxic(s) reduction plan(s) on the Internet. In addition, the ministry will post province-wide summaries on its web site.

Ontario has worked with Environment Canada to modify the federal environmental reporting system to ensure an efficient use of government resources, and eliminate the need for the regulated community to enter some information twice to meet federal and provincial reporting requirements.

## Toxic Substance Accounting

If a facility is required to prepare a plan under the Toxics Reduction Act (see the act at **www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_09t19_e.htm**), the facility must first track and measure the quantity of the toxic(s) used, created, released, destroyed, transformed, disposed, transferred off-site and contained in product, paying particular attention to how each substance moves through the facility's operations.

The ministry prepared a *Toolkit for Toxic Substance Accounting* which is available on the ministry's website.

## Toxic Substance Reporting

The first annual reports were due from industry by June 1, 2011. Due to upgrades to the online reporting with the One Window to National Environmental Reporting System (OWNERS), reporting began later than usual. As a result, Environment Canada extended the reporting period to June 17, 2011. In an effort to maintain consistency, the ministry extended the reporting deadline under the Toxics Reduction Act to June 17, 2011. All other requirements of the Toxics Reduction Act and Ontario Regulation 455/09 remain unchanged. These reports will provide a baseline for toxics use, creation, release, disposal, transferred off-site and contained in product at each facility and will allow us to track changes over time. Subsequent reports must compare the amounts of toxic substances in the current year to the past year, as well as highlight steps taken over the past year to help achieve the facility's toxics reduction objectives and any targets.

A facility's annual report will include:

- the amount of toxic substances used, created and contained in product; and
- the information reported to NPRI and required under Ontario's Airborne Contaminant Discharge Monitoring & Reporting Regulation (O. Reg 127/01).

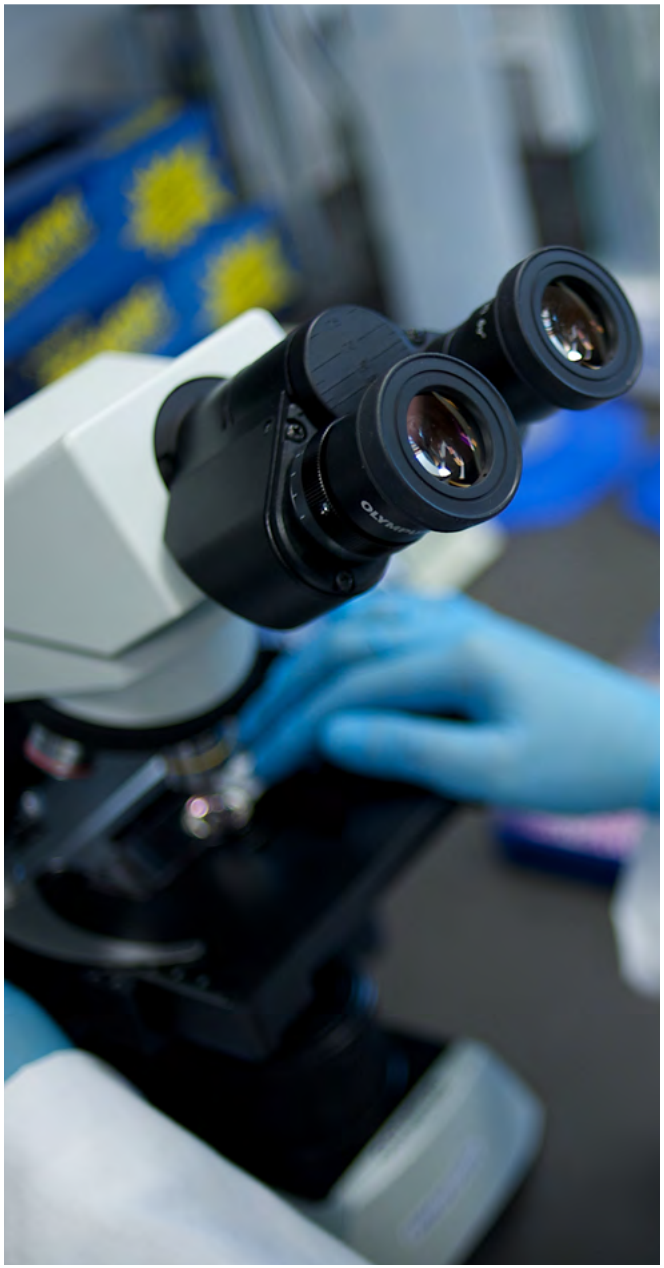
## Toxic Substance Reduction Planning

Toxic substance reduction plans will describe how facilities plan to reduce their use and creation of toxic substances. The first toxics reduction plans will be prepared by December 31, 2012, based on the 2011 accounting data reported in June 2012. While the facilities will keep their plans on site, they must submit plan summaries to the ministry and make them available to the public and their employees. These plan summaries will tell us which facilities plan to reduce the use and creation of toxic substances as well as the actions they plan to take to do so. This will help Ontarians become aware of what toxic substances are being used, created and released around them and inform them of any voluntary actions facilities are taking to reduce them.

While accounting, planning and reporting for prescribed toxic substances is mandatory, implementation of the toxic substance reduction plans is voluntary. Voluntary plan implementation allows each facility to move forward at a rate that best reflects their unique circumstances.

## Conclusion

The government developed the Toxics Reduction Strategy in response to Ontarians' concerns over the harmful impact of toxic substances on their health and the environment. We are all partners in ensuring the success of the strategy. Industry is being required to account, plan for toxics reduction and to report to the ministry and the public on voluntary implementation of those plans. Annual reports from regulated facilities will provide a benchmark of Ontario's progress on reducing toxics and will ensure citizens are informed of ongoing toxics reduction efforts. As a result of these actions, Ontarians will be able to make more informed decisions.



## Toxic Substance Reduction Planners

Each facility that uses or creates toxics must develop a plan to reduce toxics in its operations and these plans must be certified by the facility's highest ranking employee and by an individual with qualifications prescribed under the Toxics Reduction Act and regulation - a toxic substance reduction planner.

Planners will need to have specific educational and/or work qualifications, have completed the ministry course, passed an exam and obtained a licence.

These individuals could assist facilities in preparing their toxics reduction plans and will certify plans according to the requirements of the regulation. They will also provide recommendations to help businesses identify toxics reduction opportunities and potential cost savings which could help them to improve their competitive advantage in the marketplace.

## Technical and Financial Assistance

The government is helping industry by providing technical and financial assistance. To assist industry with their understanding of the new legislative obligations, the ministry is providing guidance materials. Guidance documents will include information on toxic substance accounting as well as the development of effective toxic substance reduction plans.

**Guidance documents available on the ministry website include:**

- Ontario's Toxics Reduction Program: A Guide For Regulated Facilities (the plain language guide)
- Toolkit for Toxic Substance Accounting
- Reference Tool for Assessing Safer Chemical Alternatives

**Guidance documents available upon request by e-mail (toxics.reduction@ontario.ca):**

- Examples of a Toxic Substance Reduction Plan
- Toolkit for Toxic Substance Reduction Planning
- Toolkit for Reporting and Other Helpful Information.

The Ontario Ministry of the Environment is providing funding to **Canadian Manufacturers & Exporters (CME)** in partnership with The Bloom Centre for Sustainability (formerly OCETA) to develop and deliver a "**Cleaner and Greener Manufacturing**" technical training and site-specific financial assistance program on toxics reduction (to 15 facilities). Through this program, four seminars for CEOs and five two-day workshops for facility staff were held in Fall 2010 and Winter 2011, and a report on the business benefits of toxics reduction

was prepared. This program also launched a new web portal in March 2011 that offers resources and tools to help the regulated community understand and meet the requirements of the Toxics Reduction Act, 2009. For more information about this program, visit **http://cme.binaryoak.com**.

## Guidance Material on Safer Alternatives

The Toxics Reduction Strategy includes the promotion of green chemistry and engineering to support industry and other stakeholders in building a greener economy. To this end, the Ministry of the Environment has completed a review of programs and approaches for assessing safer chemical alternatives and has developed a reference tool that can be used by government, industry and other stakeholders as a vehicle to identify and assess a chemical's feasibility for substitution.

## Toxics Reduction Act Compliance Information Sessions

In order to facilitate industry compliance with the Toxics Reduction Act, the ministry held compliance information sessions across the province in winter 2010. The purpose of these sessions was to assist facilities with their understanding of the new regulatory requirements.

### *Training Sessions*

Seven technical training sessions were offered to facilities in June 2010 to facilitate understanding of the requirements of the Toxics Reduction Act, 2009 and O. Reg. 455/09. These sessions provided insight and examples for toxic substance accounting and planning and also included information on building a business case for plan implementation.

The ministry hosted additional technical training sessions across the province in February/ March 2011. The main focus of these sessions was accounting, and reporting. To see the ministry's presentation, please go to **www.ontario.ca/toxicsreduction.**

## Conclusion

To compete and succeed in the new green economy, industry is being called upon to look for greener, healthier alternatives to using and creating toxic substances. The Government of Ontario has enacted legislation to encourage and facilitate this change and has provided technical and financial assistance in order to provide facilities with resources to support this transition.

# Pesticides Reduction: A Key Part Of The Toxics Reduction Strategy

## Importance of the Ban on the Cosmetic Use of Pesticides

Ontario's children, families and communities are now being protected from the unnecessary use of toxic chemicals found in many cosmetic-use pesticides for lawns and gardens.

Under Ontario's **Cosmetic Pesticides Ban**, which came into effect on April 22, 2009, the use of certain pesticides (Class 9) are banned for cosmetic purposes. The provincial ban supersedes municipal by-laws which address the use, offer to sell, sale or transfer of pesticides that may be used for cosmetic purposes and establishes one clear and understandable set of rules across the province.

## Key Activities

Since the ban took effect, the government has been focused on education and outreach initiatives to promote compliance, including:

- making it easier to understand the ban and green alternatives for lawns and gardens
- working with **Communities in Bloom** to organize free seminars in locations across Ontario
- visiting over 1,100 retailers to increase awareness and understanding of the ban and to assess compliance
- responding to possible non-compliance

## Impacts of the Ban

We are already assessing the impacts of the Cosmetic Pesticides Ban:

- We are finding that urban stream water pesticide concentrations of three pesticides commonly used in lawn care products have decreased by about 80 per cent since the ban.

## Exceptions to the Ban

- The ban on the use of Class 9 pesticides contains exceptions in Ontario Regulation 63/09 made under the Pesticides Act such as uses related to golf courses, agriculture, forestry and the promotion of public health or safety. Visit **www.ene.gov.on.ca/en/land/pesticides/class-pesticides.php** for a list of Class 9 pesticides.

## Public Works

Public Works, such as power works, railways and highways, require a licensed exterminator who is certified by the IPM Council of Canada to continue to use Class 9 pesticides. The owner or operator of the Public Work must prepare an annual report before April 1, 2011 and every following year. The annual report must indicate the quantity of Class 9 pesticides used, reasons for their use and the areas of application.

## Specialty Turf

Specialty turf facilities for lawn bowling, cricket, lawn tennis or croquet must have a licensed exterminator who is certified by the IPM Council of Canada to continue to use Class 9 pesticides. The owner or operator of the specialty turf facility must prepare an annual report before April 1, 2011 and every following year. The annual report must indicate the quantity of Class 9 pesticides used, reasons for their use and the areas of application.

## Golf Courses

As of April 22, 2012, golf courses that continue to use Class 9 pesticides must be fully accredited in integrated pest management principles (IPM) by the **IPM Council of Canada**. Beginning in 2012, the annual report must be presented at a public meeting before December 1, and every following year. The annual report must include the quantity of Class 9 pesticides used, reasons for their use and the areas of application on the golf course.

### *Web Portal*

Golf course annual reports are posted on the IPM Council of Canada website to facilitate golf courses in meeting the annual reporting requirement.

## The Ontario Turfgrass Research Foundation (OTRF) Invests in Alternative Pesticide Research

Through record fund raising and joint partnerships, the Ontario Turfgrass Research Foundation (OTRF) has invested a record $175,000 in turf research in 2010.

The scientific research projects selected for funding address some of the current turfgrass management issues facing the industry's key stakeholders including several research projects that will address the regulations set out by the Ontario Cosmetic Pesticide Ban. With the assistance of the Ministry of the Environment and the Agricultural Adaptation Council, new methodologies for controlling insect infestations and weed control are being studied for inclusion in future turfgrass management. Of interest to all Ontarians, a project on determining a management regime for a revived grass cultivar for use on home lawns and athletic fields holds promise for turf management without the use of commercial pesticides. Financial support is also granted for the long term effects of soil and nutrient loss/gain from continuous use of commercial sod production in Ontario. In addition, the OTRF in partnerships with other stakeholders, proudly supports continuing projects on turfgrass diseases, fertilization and irrigation methods. Innovative research outcomes will assist turf managers and home owners in their grass management regime.

Learn more about OTRF at **www.otrf.ca**.

## Horticultural Trades Foundation
### — Making Progress on Biopesticides with support from CUPRI

The Ontario Horticultural Trades Foundation received over $85,000 from the Cosmetic Use Pesticide Research and Innovation (CUPRI) Program, enabling them to fund field research on new biopesticides to control white grubs in lawn turf. The Foundation is seeing promising results. One fungal pathogen (M. anisopliae) has so far been shown to be effective against chafer grubs in lab testing, and its use in combination with nematodes appears to increase the level of control obtained. "The next step will be to test this strain and some novel use practices against chafer grubs in turf," said Dr. Michael Brownbridge of the Vineland Research and Innovation Centre. According to Tony DiGiovanni, Executive Director of The Ontario Horticultural Trades Foundation, "The lawn care sector is anxious to find effective bio-controls for white grub and chinch bug. This government funding will aid in our research efforts." Through CUPRI, the government is collaborating with researchers and industry to investigate new approaches to manage pests in lawns, gardens and parks.

**More Information:**

**Lawn and Gardening Tips**
Check out the gardening tips for homeowners on the ministry website at: **www.ontario.ca/pesticideban** or use the Ontario Ministry of Agriculture, Food and Rural Affairs' Online Gardener's Handbook 2010.

## Controlled Sales of Class 7 Pesticide Products

New requirements for Class 7 pesticide products (products with both non-cosmetic and cosmetic uses) came into effect on April 22, 2011. Class 7 products are no longer directly accessible to consumers but are available for purchase, upon request. Retailers will have to continue providing information on the allowed uses of these products under the ban.

## Education and Outreach

Through education and outreach efforts, the ministry encourages the use of greener alternatives to manage lawns, gardens, school yards and parks, and provides information to ensure understanding of the ban.

## Compliance and Enforcement

The ministry has implemented a comprehensive inspection program of pesticide vendors, lawn care companies and other pesticide users to ensure compliance with the ban. Approximately 80 per cent of the 341 retailers and lawn care companies inspected by the ministry were in compliance with the requirements of the ban over the 2009 season. This level of compliance was also observed in over 400 ministry inspections during 2010. The ministry continues to monitor compliance and work with the community to ensure full compliance with the ban.

# Growing The Green Economy

Moving towards a greener economy requires enhancing the capacity of the science and technology community. A number of initiatives, highlighted below, are underway to assist in this area.

## Green Chemistry and Engineering Chairs

Working with the **Council of Ontario Universities** (COU), the Ontario government has created two Chairs in green chemistry and engineering. The role of the chairs is to further research on safer alternatives to toxics while identifying and addressing barriers to the commercialization of green chemistry and engineering discoveries. The chairs are also building a network with other researchers and research bodies in Canada and around the world.

### *Learn More About the Chairs:*

Dr. Michael Cunningham of Queen's University is recognized internationally as one of the leading academic researchers in the field of polymer reaction engineering, specifically in the field of polymer colloids.

Dr. Suresh Narine of Trent University is an international research leader in the use of lipids for traditional and novel biomaterials.

Learn more about the Chairs by visiting **http://cou.on.ca/about/chairs-and-awards/chairs-in-environmental-science.aspx**

Dr. Cunningham: **http://cunninghamlab.ca/**

Dr. Narine: **www.trentu.ca/biomaterials/people.php**

## GreenCentre Canada

The Ontario government is investing $13.6 million in **GreenCentre Canada,** the world's first green chemistry commercialization centre. GreenCentre Canada brings academics, industry and technology experts together in order to create green chemistry innovations. These innovations help businesses find and benefit from safer alternative substances to toxics and help us move towards a healthier, greener and sustainable economy and environment.

## Green Chemistry and Engineering Awards

Two Green Chemistry and Engineering Awards are given out on an annual basis: one for an organization and one for an individual. This individual or organization must have made a significant contribution to the field of green chemistry and engineering, including the technical, economic, human health and environmental benefits.

For more information vist **www.cheminst.ca/index.php?ci_id=1841&la_id=1**.

## **Green Chemistry and Engineering Awards:** Woodbridge Foam Corporation Recognized for their History of Environmental Stewardship

Woodbridge Foam Corporation is the first recipient of the **Ontario Green Chemistry and Engineering Award** (Organization), sponsored by the Ministry of the Environment and presented by The Canadian Green Chemistry and Engineering Network (CGCEN), a forum of the Chemical Institute of Canada (CIC). The Corporation received the award for its pioneering work developing renewable resources as alternatives to using fossil fuel in manufacturing interior parts for automobiles. One of the innovations coming out of Woodbridge is the development of a bio-based foam in place of a petroleum-based foam-ensuring environmental protection and sustainability. The Corporation firmly believes that environmental action and economic profitability go hand and hand, as evident in their successes over the years.

"We're thrilled that our Exotherm Management Technology (EMT) has been licensed all around the world and is recognized and embraced by the United Nations. It minimizes or eliminates toxics, ozone depleting agents, workplace hazards, and harmful emissions, which is good for business and the environment", said Mr. Bob Magee, Chairman and CEO. Woodbridge Foam Corporation received their award on August 16, 2010 at the 2010 **International Union of Pure and Applied Chemistry** (IUPAC) Conference on Green Chemistry in Ottawa, Ontario.

## **Green Chemistry and Engineering Awards:** Leo Lau Recognized for Guiding Companies in Toxics Reductions

Dr. Leo W. M. Lau of the University of Western Ontario, is the first recipient of the **Ontario Green Chemistry and Engineering Award** (Individual), sponsored by the Ministry of the Environment and presented by The Canadian Green Chemistry and Engineering Network (CGCEN), a forum of the Chemical Institute of Canada (CIC). Dr. Lau has made great strides in advancing green chemistry through his teaching, his strong commitment to green chemistry research and through collaborating with many companies on making and using green technology innovations. His work has steered many companies towards the new green economy, teaching them how they can become more efficient and environmentally friendly in their processes and helping them be good corporate citizens.

"As a collaborator with industry, I've completed contracts and projects to help companies to find methods to improve processes so as to reduce waste and toxics. I've also formed global links to push Ontario-developed technologies to the world," says Dr. Lau. Dr. Lau received his award on August 16, 2010 at the 2010 **International Union of Pure and Applied Chemistry** (IUPAC) Conference on Green Chemistry in Ottawa, Ontario.

## New Air Standards

In February 2010, new/updated air standards for 33 substances took effect. Included in this group of substances was lead, for which the ministry set a more stringent standard based on more recent scientific data. The new air standard for lead took effect after a three year phase-in period, shorter than the usual five year time frame applied to the other air standards in this group due to concerns related to children's health.

The ministry has continued to work on new/updated air standards in two groups:

Nine new/updated air standards for Group 1 substances were posted on the Environmental Registry in July, 2009 for public comment and were finalized in July 2011 (EBR# 010-7190). These new/updated air standards will be phased in over five years and will take effect on July 1, 2016.

**Group 1:**

- Benzene
- Benzo[a]pyrene (as a surrogate for total polycyclic aromatic hydrocarbons (PAHs))
- 1,3-Butadiene
- Dioxins, furans and dioxin-like PCBs
- Hexavalent chromium compounds
- Chromium and chromium compounds (metallic, divalent, trivalent)
- Manganese and manganese compounds
- Nickel and nickel compounds
- Uranium and uranium compounds

The ministry is currently reviewing the science supporting air standards for a possible Group 2 list of substances.

## Transboundary Pollution

Ontario, Canada and the United States have acted to address transboundary pollution through the implementation of emission control programs, cooperative efforts, and bi-national agreements. Ontario has also participated in American initiatives in support of stricter control measures and standards that will have a positive impact on air quality in Ontario.

## Cleaning Up Great Lakes Areas of Concern

Our Great Lakes Watershed is particularly vulnerable to toxics for several reasons. The lakes are home to most of the province's urban, industrial and agricultural activity and more than 98 per cent of Ontarians live in the Great Lakes-St. Lawrence River watersheds.

One of our Great Lakes initiatives is the clean-up of hot spots, or Areas of Concern (AOCs). Under the 1987 **Canada-U.S. Great Lakes Water Quality Agreement**, 43 AOCs were identified across the Great Lakes for targeted clean-up and restoration. These are areas where the environment has been harmed to the point that it affects the use and enjoyment of that area of the lake or may be affecting the health of the lake.

Randle Reef is an area of contaminated sediment located in the Hamilton Harbour Area of Concern. Ontario provided $46.3 million to help cap sediment leftover from past industrial activity, improving water quality and helping to ensure the health of the harbour's natural habitat. Cleaning up Randle Reef is a major step toward improving the health of the Hamilton Harbour ecosystem and delisting it as a **Great Lakes Area of Concern**.

We have made considerable progress in restoring AOCs. On April 16, 2010, Wheatley Harbour, a commercial fishing harbour located on the north shore of Lake Erie, was officially delisted as an AOC. It is the third AOC in Ontario to be delisted, along with Collingwood Harbour and Severn Sound. A fourth Ontario AOC has been designated an "area in recovery" where all clean-up actions are complete.

Ongoing monitoring programs for the Great Lakes also help to determine the status of toxics in given areas.

## Replacing Coal-Fired Electricity

Burning coal results in air pollution and greenhouse gas emissions and is harmful to human health. Ontario is phasing out dirty coal-fired electricity generation by the end of 2014, the single-largest climate change initiative in Canada.

We are already seeing results from this action:

- Coal generation was down more than 70 per cent in 2009 from 2003 levels, the lowest output in 45 years.
- In 2009, less than seven per cent of Ontario's electricity generation came from coal plants.

Ontario is also planning for future energy generation that will focus on efficient, localized generation from smaller, cleaner sources of electricity rather than exclusively from large, centralized power plants transmitting power over long distances.

## Drive Clean

The Drive Clean program helps Ontarians make smart choices about the way we maintain and drive our vehicles. Improvements in vehicle-emissions technologies continue to reduce harmful emissions from new vehicles.

# Conclusion

It is important for the health of our citizens and for the health of our environment that we reduce the use, creation and release of toxic substances. As a result, the Ontario government is taking steps to support industry as it transitions toward using more innovative greener processes and creating more environmentally-friendly products in the new green economy. These efforts, combined with our related initiatives, such as reducing our use of pesticides, cleaning up Great Lakes areas of concern and phasing out our usage of coal-fired electricity, are creating a healthier Ontario. Our actions will lead to a cleaner and greener province for all of us.

# How to Stay Informed

### *News Updates*

In order to be informed, via email, when any new information or updates are available. Please visit **www.ene.gov.on.ca/environment/en/main/subscription/index.htm**.

### *Contact Information*

We all need to play a role in reducing toxics and the use of cosmetic pesticides.

For more information:
Public Information Centre
Phone: 1-800-565-4923 / 416-325-4000
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**picemail.moe@ontario.ca**

To download this report please visit the ministry's website, **www.ontario.ca/environment**.

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